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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,205	07/02/2001	Kevin R. Lensing	2000.071900	2053

23720 7590 03/24/2003

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EXAMINER

KOYAMA, KUMIKO C

ART UNIT PAPER NUMBER

2876

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/897,205

Applicant(s)

LENSING, KEVIN R.

Examiner

Kumiko C. Koyama

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. Acknowledgement is made of receipt of request for reconsideration filed on January 27, 2003.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-80 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 6,383,824 in view of U.S. Patent No. 6,479,200.

Re claim 1 of the instant claimed invention: Claim 1 of the present invention recites,

"A method, comprising:

- forming at least one grating structure in a layer of photoresist material, said grating structure being comprised of a plurality of photoresist features of a first size;
- performing an etching process on said photoresist features of said at least one grating structure to reduce said photoresist features to a second size that is less than said first size;
- illuminating the at least one grating structure;
- measuring light reflected off of said grating structure after said etching process is started to generate an optical characteristic trace for said grating structure;
- comparing said generated optical characteristic trace to a target optical characteristic trace that corresponds to a grating structure comprised of a plurality of photoresist features having a desired profile; and

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stopping said etching process based upon said comparison of said generated trace and said target trace.”

In 6,383,824 Patent, the Applicant claims,

“A method, comprising:

forming at least one grating structure above a substrate;

performing a deposition process to form a process layer above said grating structure;

illuminating said process layer and said at least one grating structure;

measuring light reflected off of said process layer and said at least one grating structure after said deposition process is started to generate an optical characteristic trace for said process layer and said grating structure;

comparing said generated optical characteristic trace to a target optical characteristic trace that corresponds to a process layer having a desired surface profile; and

stopping said deposition process based upon said comparison of said generated trace and said target trace.”

6,383,824 Patent fails to claim that the grating structure is formed in a layer of photoresist material.

In Patent No. 6,479,200, Stirton discloses a method comprising forming a plurality of grating structures in a layer of photoresist, each of said formed grating structures being comprised of a plurality of photoresist features (col 12 lines 23-26). Stirton teaches that photoresist etching process may be performed to further reduce the size of the photoresist features (col 2 lines 57-59). Stirton also discloses a method comprising illuminating each of said formed grating structures (col 12 line 27), measuring light reflected off of each of said plurality of formed grating structures to generate an optical characteristic trace for each of said plurality of formed grating structures (col 12 lines 28-32), and comparing each of said generated optical characteristic traces to at least one optical characteristic trace from the library of optical characteristic traces, each of which corresponds to a grating structure comprised of a plurality of photoresist features having a known profile (col 12 lines 33-35, lines 19-22).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the 6,479,200 Patent claim to the 6,383,824 Patent to form a grating structure in a layer of photoresist material in order to provide a more accurate pattern, which leads to a better quality and reliable product and device.

Allowable Subject Matter

4. Claims 1-80 would be allowable upon the timely filing of a terminal disclaimer to overcome the Non-statutory Double Patenting rejection as set forth above.

5. The following is an examiner's statement of reasons for allowance:

The best prior art of record Stirton discloses a method comprising forming a plurality of grating structures in a layer of photoresist, each of said formed grating structures being comprised of a plurality of photoresist features (col 12 lines 23-26). Stirton teaches that photoresist etching process may be performed to further reduce the size of the photoresist features (col 2 lines 57-59). Stirton also discloses a method comprising illuminating each of said formed grating structures (col 12 line 27), measuring light reflected off of each of said plurality of formed grating structures to generate an optical characteristic trace for each of said plurality of formed grating structures (col 12 lines 28-32), and comparing each of said generated optical characteristic traces to at least one optical characteristic trace from the library of optical characteristic traces, each of which corresponds to a grating structure comprised of a plurality of photoresist features having a known profile (col 12 lines 33-35, lines 19-22).

Stirton fails to specifically teach a method for stopping etching process based upon the comparison of at least one of the generated traces and the target traces, a method comprising

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measuring light reflected off of each of said plurality of grating structures after the etching process is started to generate an optical characteristic trace for each of the plurality of grating structures and a method comprising measuring light reflected off of the grating structure during the etching process to generate an optical characteristic trace for the grating structure.

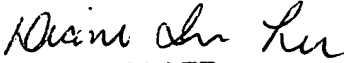
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kumiko C. Koyama whose telephone number is 703-305-5425. The examiner can normally be reached on Monday-Friday 7am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kck
March 20, 2003


DIANE I. LEE
PRIMARY EXAMINER